# Annotated list of seed plants of Singapore (III)\*

by

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# II. Angiosperms-Dicotyledons (continued)

#### 19. CAPPARIDACEAE

Key to the genera

A. Leaves simple; scandent shrub; fruit a many-seeded berry

Capparis

A. Leaves palmately divided or compound.

B. Herbs; fruit cylindric, dry

Cleome

B. Erect trees; fruit globose, fleshy

Crataeva

## Capparis micracantha DC.

Shrub, scandent; consisting of two forms: the wild form, ssp. korthalsiana (Miq.) Jacobs, with 60–100 stamens per flower was once collected from Changi (Ridley 4418) and Bukit Timah, called C. finlaysoniana Wall. in Ridley's Flora; the cultivated form, ssp. micracantha, with 20–35 stamens per flower, is occasionally planted in gardens. Vern. Jambol merah.

#### Cleome aculeata Linn.

Herb, often with stipular thorns; flowers white to cream; stamens 6; ovary on a short stalk; weed, of tropical American origin.

### Cl. gynandra Linn.

Tall herb, often cultivated in gardens; flowers white; stamens and ovary both elevated by a long stalk (androgynophore); also called *Gynandropsis* pentaphylla DC. Native of Tropical America.

### Cl. rutidosperma DC.

Herb; flowers violet-blue to pink; stamens 6; seeds with an open cleft; weed, of African origin.

## Cl. speciosa Rafin.

Tall herb, often growing in gardens as an ornament; flowers pink; stamens and ovary both elevated by a long stalk; native of trop. America. 醉蝶花。

#### Cl. viscosa Linn.

Herb; flowers bright yellow; stamens 10-20; ovary sessile; weed, pantropical.

### Crataeva religiosa Forst. f.

Small tree, occasionally planted in gardens; leaves 3-foliolate; flowers creamy yellow; native of Malaya and Tropical Asia. Vern. Cadat. 魚木。

<sup>\*</sup> continued from Gdns' Bull. Sing. 27:83.

### 20. CRUCIFERAE

### Key to the genera

### A. Flowers white or purplish.

B. Erect herbs; petals 1.5-2 cm long Raphanus

B. Creeping or floating herbs; petals less than 7 mm long Nasturtium

### A. Flowers brightly yellow.

C. Garden vegetables; petals over 0.5 cm long; disc-glands 4 Brassica Rorippa

C. Weeds; petals less than 0.5 cm long; disc-glands 6

### Brassica\* alboglabra Bailey

Kai Lan or Chinese kale; native of S. China; growing locally from the imported seeds. 芥藍。

#### Bras. chinensis Jusl.

Pak Choy or Chinese white cabbage; prob. native of S. China; one of the commonest vegetables in markets; growing locally and also imported; many varieties, including; Pak Choy (var. chinensis 白菜), Choy Sam (var. parachinensis 菜心), etc.

### Bras. juncea Czern. & Coss.

Kai Choy or mustard cabbages; native of subtropical Asia; mostly imported; several varieties, including the crisp leaved (var. crispa) and the broad-leaved (var. rugosa) and others. 芥菜。

### Bras. oleracea L.

The cabbages; native of S. Europe; almost all imported; several varieties, including cabbages (var. capitata 椰菜,包心菜), cauliflower (var. botrytis 花椰菜 ), kohl-rabi (var. gongylodes 芥蘭頭 ) etc.

### Bras. pekinensis Rupr.

The celery cabbage or the pale and soft-leaved cabbage; native of China; mostly imported; common varieties including the compact-headed Shangtung cabbage (var. cylindrica 黄椰白菜), the loose headed celery cabbage (var. laxa 黄金白菜 ), etc.

### Nasturtium officinale R. Br.

Water cress, a native of Europe; aquatic herb, creeping or floating, growing locally as a vegetable. 西洋菜。

### Raphanus sativus L.

Radish, prob. a native of temperate Asia or the near East; annual or perennial herb, the fleshy tap root is a common vegetable, mostly imported. 蘿蔔。

## Rorippa indica Hiern

Annual weed, occasionally found in waste land; flowers very small, bright yellow; formerly called Nasturtium indicum DC.

<sup>\*</sup>For the nomenclature of the Brassica species, G.A.C. Herklot's Vegetables in South-East Asia (1972) is followed.

### 21. MORINGACEAE

## Moringa pterygosperma Gaertn.

Horse radish tree, native of India; small tree; leaves 3 or 4 times pinnately compound; flowers pale yellow, in large panicles; fruit a long cylindric capsule often cultivated near villages for its edible leaves and fruits. Vern. Lembugai, 辣木。

### 22. CRASSULACEAE

## Kalanchoe laciniata (L.) DC.

Succulent herb; flowers yellow or orange; cultivated, native of continental Asia.

# Kalan. pinnata (Lamk.) Pers.

Flowers purple; detached leaves producing young plants from leaf margins or midrib; also called *Bryophyllum calycinum* Salisb.; native of Africa.

### 23. SAXIFRAGACEAE

# Key to the genera

A. Herbs; leaves rounded

Saxifraga

A. Shrubs or trees; leaves ovate or oblong.

B. Flowers 4-merous, functional, in terminal racemes

Polyosma

B. Flowers 5-merous, all sterile, in dense terminal corymbs

Hydrangea

# Hydrangea macrophylla (Thunb.) Ser. ex DC.

Shrub or subshrub; flowers all sterile, in large corymbs, pink or blue; garden plant, propagated by cutting; native of China. 繡珠花。

# Polyosma conocarpa Ridl.

Small tree; petals linear, white; specimens not available.

# Poly. fragrans Benn.

Small tree; once collected by Wallich (No. 8472), Not Seen.

# Poly. ridleyi King.

Tree; flowers white; recorded from Seletar.

# Saxifraga stolonifera Meerb.

Small herb, with long thin runners; leaves rounded, lobed, hairy; occasionally cultivated in pots, never flowering; native to China, often called Saxif. sarmentosa Linn. f. 虎耳草。

#### 24. PITTOSPORACEAE

# Pittosporum ferrugineum Ait

Shrub or small tree; leaves crowded at twig tips, in false whorls; flowers yellowish white; capsule orange, 2-valved; Kranji, (Mat 5912) Changi, Seletar, often along sea-shores. Vern. Giramong.

### 25. DICHAPETALACEAE

## Dichapetalum sordidum (Ridl.) Leenh.

Shrub or small tree; infl. axillary; petals oblong, yellow, bifid at apex; Bajau, (Mat 6752). Called Chailletia sordida Ridl. in Ridley's Flora.

### 26. ROSACEAE

### Key to the genera

A. Herbs or shrubs, creeping, scandent or climbing.

B. Tiny herb with creeping stolons; leaves 3-foliate

Duchesnea

B. Shrubby with prickly stems.

C. Leaves pinnate; carpels on a concave receptacle

Rosa

C. Leaves simple, entire or shallowly lobed; carpels on a convex receptacle

Rubus

A. Trees or shrubs, erect.

D. Style terminal; carpel 1, 2-ovulate

Prunus

D. Style basal.

E. Ovary 1-loculate.

F. Stamens 5-10

Licaria

F. Stamens 2

Parastemon

E. Ovary 2-loculate

Parinari

### Duchesnea indica Focke

Tiny herb with slender stolons; aggregate fruits red, spheroid, a miniature of the strawberry; also called *Fragaria indica* Andr. A weed, occasionally found in shade and wet places.

# Licaria splendens (Korth.) Prance

Small tree; leaves alternate; flowers small, white; fruit a small red drupe; common in secondary forests in Water Catchment area (Cantley 2592). Called Coccomelia nitida Ridl. and Angelesia splendens Korth. in Malayan literature.

# Parastemon urophyllus A. DC.

Large tree; flowers very small, in racemes; fruit oblong, yellowish or pink; in open places often near the sea; formerly found in Jurong (*Ridley 6066*), Changi, Chua Chu Kang.

# Parinari corymbosa (Bl.) Miq.

Large tree; Changi (Ridley 4792) and Fort Canning. Called Parinarium griffithianum Benth. in Ridley's Flora, and Maranthes corymbosa Bl. in Whitmore's Tree Flora.\*

# Pari. excelsa (Jack) Kosterm.

Large tree; flowers white, in racemes or panicles; fruit rounded, slightly compressed; formerly found in Chua Chu Kang. Called *Parinarium asperulum* Miq. in Ridley's Flora, and *Atuna excelsa* Kosterm. in Whitmore's Tree Flora.

<sup>\*</sup>Tree Flora of Malaya 2 (1973)

## Pari. oblongifolia Hook. f.

Large tree; leaves glaucous beneath; fruit ellipsoid (6 × 3 cm); in dense forests, Bukit Timah and Mandai (Kiah s.n. in 1940); one of the valuable timber trees in Malaya. Vern. Balau.

## Pari. sumatranum (Jack) Benth.

Large tree, buttressed; flowers white; fruit ellipsoid, hard, brown with white dots; in forests, Chua Chu Kang (Ridley 3901), Seletar. Called Parinarium costatum Bl. in Ridley's Flora.

### Prunus arborea (Bl.) Kalkman

Large or small tree; in forests, Kranji, Tanglin, Cluny Road (Ridley 4452): called Pygeum parviflorum Hook. f. and Pyg. persimile Kurz in Ridley's Flora.

## Prun. grisea (C. Muell.) Kalkm. var. tomentosa Kalkm.

Shrub; Seletar (Sinclair 40272). Called Pygeum lanceolata Hoff. in Ridley's Flora.

# Prun. polystachya (Hook. f.) Kalkman

Tree; leaf-blades with 2 conspicuous glands at the base; fruit rounded, 2-lobed; common in forests, Gardens jungle, Catchment forests, etc.

## Rosa chinensis Jacq.

Native of China, called R. indica L. in Burkill's Dictionary; including: var. semperflorens or the crimson China rose, var. minima the dwarf fairy rose, etc. Several other garden species and hybrids are introduced and cultivated. 月季花。

## Rubus glomeratus Bl.

Climbing shrub; leaves ovate deltoid, obscurely 3-lobed; petals white; fruit orange, of few drupes; Jurong (Ridley s.n. in 1880). Vern. Akar balan adap.

#### Rubus moluccanus L.

Shrub, armed with small hooked prickles; leaves ovate or rounded, cordate, 3-8 shallowly lobed; fruit red, of many small drupes; Bukit Timah (Sinclair 37800), Tanglin, Jurong. Called R. angulosus Focke in Ridley's Flora. Vern. Tempu rengat.

#### 27. CONNARACEAE

### Key to the genera

- A. Carpels 4 to 5 in a flower, usually more than 1 carpel developing into fruit (except Rourea); calyx usually enlarged in fruiting stage. (except Cnestis).
  - B. Leaves 3-foliolate; fruit warty

Agelaea

B. Leaves pinnately compound; fruit glabrous

Cnestis, Rourea

A. Carpel 1 per flower; calyx not enlarged.

C. Leaves 1-foliolate; flowers small, in axillary clusters

Ellipanthus

C. Leaves mostly pinnate; flowers in large terminal panicles

Connarus

## Agelaea borneensis Merr.

Climber; leaves 3-foliolate, leaflets clliptic to oblong; flowers small, pinkish red; fruit papillose; common in forests; Tanglin, Sembawang, Bukit Timah (Ridley 5585), Changi; called Agel. vestita in Ridley's Flora. Vern. Akar kachang kachang.

## Agel. macrophylla (Zoll.) Leenh.

Lateral leaslets ± symmetric; Changi (Hullett 426); called Agel. hullettii in Ridley's Flora.

## Agel. trinervis Merr.

Lateral leaflets very oblique; fruit warty; Changi (Ridley s.n. in 1893); called Agel. wallichii in Ridley's Flora. Vern. Akar kachang jantan.

## Cnestis platantha Griff.

Climber, sometimes a shrub; leaves odd-pinnate, leaflets 21-31; flowers white; fruit 1 or 2 per flower, pear-shaped; common in dry woods and open places; Bukit Timah (*Ridley* s.n. in 1894), Tanglin, Changi.

## Connarus ferrugineus Jack

Climber, sometimes a shrub; leaves odd-pinnate, leaflets 7–11; branches densely ferruginous-tomentose; fruit ellipsoid; Bukit Timah (*Md. Shah 744*). Bukit Mandai.

# Conn. grandis Jack

Leaflets 3-5, lanceolate to oblong-ovate; fruit obovoid; Changi, Nee Soon (Sinclair 40321).

# Conn. monocarpus L. ssp. malayensis Leenh.

Leaflets 5-9; fruit obliquely spindle-shaped; formerly found at Bukit Mandai, Changi and Chua Chu Kang (*Ridley* s.n. in 1894); called *Conn. oliogophyllus* in Ridley's Flora.

#### Conn. semidecandrus Jack

Leaflets 3-7, elliptic to lanceolate; fruit pear-shaped, compressed; Bukit Mandai, Cluny Road, Seletar (Mohd. Noor 26).

# Ellipanthus tomentosus Kurz.

Large tree; leaves 1-foliolate; flowers small, white; Bukit Timah (Corner 34639), Gardens jungle; called Ellip. griffithii in Ridley's Flora.

# Rourea fulgens Planch.

Large climber or shrub; leaves odd-pinnate; leaflets 13-51, very oblique at base; young leaves pink; flowers white or pink; fruit ovoid to ellipsoid, curved; formerly collected at Kranji (Goodenough 2027), and at Gardens jungle.

### Rour. minor (Gaertn.) Leenh.

Leaflets 1-19; Bukit Timah, Changi (Ridley 3981); called Rour. acuminata in Ridley's Flora.

#### Rour. mimosoides Planch.

Leaflets 5-51, the base slightly oblique; fruit narrowly ellipsoid. curved; Changi (Goodenough 2020) and also very common in reservoir woods; Vern. Semilat.

## Rour. rugosa Planch.

Leaflets 15-41; fruit oblong-ovoid, curved; Changi, Seletar (Hullett 594); Vern. Semilat puteh.

### 28. LEGUMINOSAE

Key to the subfamilies.

- A. Flowers regular; calyx and corolla mostly valvate in bud
- I. Mimosoideae
- A. Flowers irregular; perianth segments conspicuously imbricate in bud
  - B. Corolla caesalpinaceous, namely petals 5, free, with the uppermost (posterior) petal innermost
  - B. Corolla papilionaceous, namely petals 5, with the uppermost petal outermost, and the two lower (anterior) petals often basally connate
- II. Caesalpinoideae
- III. Papilionoideae

#### (I) Mimosoideae - Conspectus of tribes\*

#### A. Calyx-lobes valvate.

- B. Stamens more than 10.
  - 1. Ingeae (Filaments united into a tube): Serianthes, Samanea, Pithecellobium, Albizia, Calliandra.
  - 2. Acacieae (Stamens free or nearly so): Acacia.
- B. Stamens as many or twice as many as petals.
  - 3. Mimoseae (Anthers glandless): Leucaena, Mimosa.
  - 4. Adenanthereae (Anthers crowned by a gland; seeds albuminous): Neptunia, Adenanthera.
  - 5. Piptadenieae (Anthers usually glandulate; seeds exalbuminous): Entada.

#### A. Calyx-lobes imbricate.

6. Parkieae: Parkia.

#### (II) Caesalpinoideae - Conspectus of tribes

- A. Leaves pinnate, or sometimes simple or 1-foliolate.
  - B. Sepals free to the base.
    - 1. Cynometreae (Anthers dorsifixed, dehiscing by slits; leaves simple pinnate or simple; bracteoles small or large, not enclosing the flower buds): Cynometra, Sindora.
    - 2. Amherstieae (Anthers and leaves as above; bracteoles well developed, enclosing the flower buds, valvate, persistent): Saraca, Trachylobium, Hymenaea, Tamarindus, Intsia, Amherstia, Brownea.
    - 3. Cassieae (Anthers firm in texture, usu. dehiscing by pores; leaves usu. simple pinnate): Dialium, Koompassia, Cassia.

<sup>\*</sup>Adapted and modified from J. C. Willis' Dictionary (7th ed. 1972).

- B. Sepals joined below.
  - 4. Cercideae (Leaves usu. simple, bilobed; stamens 10 or fewer): Bauhinia.
- A. Leaves bipinnate.
  - 5. Caesalpinieae (Flowers in racemes or panicles): Caesalpinia, Peltophorum, Delonix.

### (III) Papilionoideae — Conspectus of tribes

- A. Stamens free or almost so.
  - . Sophorieae (Trees, shrubs or rarely woody herbs or lianes; leaves pinnate or 1-foliolate with a joint between petiole and lamina): Ormosia, Sophora.
- A. Stamens mon- or di- adelphous (i.e. filaments joined into one or two groups).
  - B. Herbs or shrubs (or trees or lianes in tribes 3 & 7); pods dehiscent unless short and 1-2 seeded, or inflated.
    - C. Pods not transversely jointed.
    - 2. Genisteae (Usually shrub; leaves simple or digitately 3- or more foliolate, leaflets entire; stamens usually monadelphous, anthers often of 2 sizes): Crotalaria.
    - 3. Astragaleae (Galegeae) (Leaves pinnately 5-many or rarely 3- or 1-foliolate; leaflets usually entire; rachis not ending in a tendril; stamens usually diadelphous): Indigofera, Psoralea, Tephrosia, Milletia, Giliricidia, Sesbania.
    - 4. Fabeae (Vicieae) (Herbs, leaves even-pinnate, without stipels, rachis ending in a point or tendril; stamens 10, diadelphous): Vicia, Pisum.
    - 5. Abreae (Shrubs or twiners woody at the base; leaves even-pinnate, rachis ending in a point, usually stipellate; stamens 9, united): Abrus.
    - 6. Phaseoleae (Often twining; leaves pinnately 3-foliolate, usually stipellate, rarely 1 or 5-7 foliolate; leaflets entire or lobed; stamens di- or monadelphous): Clitoria, Centrosema, Glycine, Erythrina, Mucuna, Canavalia, Cajanus, Maughania, Phaseolus, Vigna, Pachyrrhizus, Dolichos, Psophocarpous.
    - C. Pods transversely jointed.
    - 7. Coronilleae (Hedysareae) (Shrubs or twiners; leaves pinnately 3- to many-foliolate, stipellate or not): Aeschynomene, Arachis, Zornia, Desmodium, Alysicarpus; Uraria.
  - B. Trees, shrubs or lianes; pods indehiscent.
    - 8. Dalbergieae (Leaves pinnately 5-many-foliolate, rarely 1-3-foliolate, stipellate or not): Dalbergia, Pterocarpus, Pongamia, Derris, Andira.

### Abrus precatorius L.

Twining subshrubs; leaves even-pinnate, leaflets 8-17 pairs; seeds hard, scarlet with a black spot; in hedges and on sea-shores (Changi. *Ridley* s.n. in 1891). Probably of African origin, naturalized. Vern. *Akar saga*, 相思子。

### Acacia auriculiformis A. Cunn. ex Benth.

Tree; phyllodes (seemingly leaves) dull green; flowers small in yellow clusters; pods curling up into a ring when ripe, dark brown. Native of New Guinea and Australia (or Thursday Island in the Torrey Strait); extremely common all over the island.

#### Acac, farnesiana Willd.

Shrub or small tree, thorny; leaves bipinnate; flower heads bright yellow, fragrant. Probably of American origin. Vern. Lasana, 命合歡。

#### Acac. cincinnata F. Muell.

Shrub or small tree; phyllodes silvery-coloured ("Silver Wattle"); native of tropical Queensland. Sometimes called *Acac. mangium* Willd. (from Moluccas) which may prove to be conspecific with this species.

### Acac. pseudo-intsia Miq.

Big climber; leaves bipinnate; pinnae 4-10 pairs; leaflets 10-30 pairs on each side stalk; in forests, Bukit Mandai, Changi (Hullett 458), Tuas, Chua Chu Kang. Vern. Akar kapok.

#### Adenanthera bicolor Moon

Tree; pods curved in a ring; seeds one third black and two thirds scarlet; in lowland forests, Bukit Mandai (Ridley 3636a), Pasir Panjang, etc.

### Ad. pavonina L.

Large tree; leaves bipinnate; leaflets 9-15 on each side stalk; pod curved; seeds scarlet. Native of tropical Asia; commonly planted. Vern. Saga 孔雀豆。

## Aeschynomene indica L.

Herb; leaves pinnate, with 20-30 pairs of leaflets; flowers yellow; pods jointed, breaking into 8-10 prickly parts; in open wet places; Galang (*Ridley 10355*).

## Albizzia falcataria (L.) Fosberg

Tall tree, very fast-growing; native of Moluccas, planted and wild in Singapore, common in waste places. Also called A. falcata Back. or A. moluccana Miq.

#### Alb. retusa Benth.

Tree; leaves bipinnate; pinnae 1-4 pairs; leaflets 3-10 pairs on each side stalk; flower heads pink; rare, once collected at Pulau Ubin (*Ridley 4752*). Called A. littoralis T. & B. in Ridley's Flora.

# Alb. pedicellata Baker

Tall tree; leaves bipinnate; leaflets 12-16 pairs on each side stalk; pods flat (30-45 cm long) and thin; in forests, Kranji (Ridley 6297).

# Alysicarpus vaginalis DC.

Ascending herb; uni-foliolate, variable; flowers white or dark red; pods cylindric, jointed, of 4–9 1-seeded pieces; in open places, Changi (*Ridley 2080a*), Telok Kurau.

#### Amherstia nobilis Wall.

Small tree; leaves pinnate; leaflets 4-7 pairs, opposite; flowers in hanging racemes from branches. Native of Burma, a well-known garden ornamental.

# Andira inermis (Wright) H.B.K.

Tree; leaves odd-pinnate, with 4-8 pairs of leaflets; flowers dark purple; pods pear-shaped, indehiscent. Native of Surinam in trop. America.

# Arachis hypogaea L.

Ascending herb, rooting at the base; leaves even-pinnate, with 2 pairs of leaflets; flowers bright yellow; after pollination, the ovary on a lengthening stalk is forced into the ground, where the pod develops "ground-nut". Native of Brazil, occasionally cultivated. Vern. Kachang tanah, 花生, 落花生。

#### Bauhinia acuminata L.

Shrub; leaves simple, 2-lobed, the lobes pointed; flowers white; stamens 10. Native of S.E. Asia, cultivated.

## Bauh. flammifera Ridl.

Large climber; flowers in large panicles, yellow, orange then red. Called *Phanera flammifera* (Ridl.) de Wit. Native of Malaya.

## Bauh. griffithiana Prain

Large climber; petals white; stamens 6; in thickets. Also called *Phanera* griffithiana (Prain) de Wit.

### Bauh. monandra Kurz

Tree; petals yellow then pale red; perfect stamen 1. Native of America, cultivated.

## Bauh. purpurea L.

Bush or small tree; flowers pink; stamens 3 with pink filaments. Continental Asia, cultivated.

#### Bauh. semibifida Roxb.

Large climber; flowers white then greenish yellow; stamens 3, white; in secondary jungle, Bukit Mandai, Bukit Timah (Burkill 323), Gardens jungle. Also called *Phanera semibifida* (Roxb.) Benth.

### Bauh. tomentosa L.

Shrub or tree; flowers solitary or in pairs; petals pale yellow; stamens 10. Trop. Africa and continental Asia, cultivated.

### Baun. variegata Bl.

Bush or small tree; leaves simple, 2-lobed; flowers in short racemes, pink to violet; perfect stamens 5. Native of continental Asia, cultivated. A natural hybrid between this species and *Bauh*. purpurea is called *Bauh*. blackeana Dunn which also has 5 stamens but remains sterile, commonly cultivated in gardens.

#### Brownea ariza Benth.

Shrub or small tree, branches drooping; new leaves pink, developing in tassels; flowers red, in a crowded head. Native of Colombia, occasionally cultivated in gardens.

# Caesalpinia bonduc Roxb. emend. Dandy & Exell

Prickly shrub; leaves bipinnate; pinnae 6-10 pairs; leaflets 12-24; stipules pinnate; petals yellow; near the sea.

#### Caes. crista L.

Prickly black-stemmed climber; leaves bipinnate; flowers bright yellow; on sandy beaches and mangroves, Kranji, Jurong. Called C. nuga in Ridley's Flora.

# Caes. globulorum Bakh. f. & Van Royen

Leaves and leaflets larger than those of Caes. bonduc; stipules subulate; near the sea.

## Caes. pulcherrima (L.) Swartz

Shrub; flowers yellow or red; known as Peacock flower, native of S. America. Also called *Poinciana puicherrima*, 金鳳花。

## Caes. sappan L.

Prickly shrub or tree; flowers bright yellow. Native of Continental Asia. occasionally cultivated. Vern. Sappan tree, 蘇木。

## Cajanus cajan (L.) Huth.

Shrub, white hairy; leaves 3-foliolate. Vern. Kachang kayu, pigeon pea,木豆。

### Calliandra brevipes Benth.

Erect shrub; leaves bipinnate; pinnae in one pair; leaflets 20-40 pairs; free part of the filaments pinkish above and white below. Native of Tropical America.

### Call. haematocephala Benth.

Like the above species, but leaflets 6-10 pairs, and free part of the filaments entirely blood red. Native of Trop. America.

#### Canavalia catharica Thou.

Twiner; leaves 3-foliolate; flowers rose-pink to dark purple; pod linear oblong (7–12.5  $\times$  4–6 cm), strongly 3-keeled; beans poisonous; common on sandy shore. Also called *C. turgida*, *C. obtusifolia*.

## Cana. ensiformis DC.

Jack bean; native of the New World tropics; pod  $20-30 \times 2-3$  cm. Vern. Kachang parang puteh.

# Cana. gladiata DC.

Sword bean; native of the old world tropics; pod  $30-60 \times 3-4.5$  cm, edible. Vern. *Kachang parang*.

# Cana. maritima Piper

Twiner; flowers pink, sweet scented; pod  $6-15 \times 1.5-3$ ; beans edible; common on seashores; Changi. Also called *C. turgida* Grah. ex Gray.

#### Cassia alata L.

Shrub; leaves simple pinnate; leaflets 8-20 pairs; flowers orange, in racemes, at first covered with large dark orange bracts; pod black, with 2 broad wings along its length; native of tropical America. Vern. Gelenggang. In addition to those listed below, there are a number of others species planted. All the Cassia species in Singapore are introduced; 2 of them, C. nodusa and C. siamea are native to the Malayan mountains, the rest are from various parts of the World.

### Cas. fistula L.

Tree; leaflets 3-8 pairs; hanging racemes with yellow flowers (hence "Golden shower"); pod woody, cylindric. Native of India and Ceylon.

# Cas. fruticosa Mill.

Shrub; leaflets 2-pairs; flowers pale yellow, in loose terminal clusters. Native of Tropical America.

### Cas. hirsuta L.

Hairy herb; leaflets 3-6 pairs; flowers 1-3, axillary, yellow; pod linear, rounded. Tropical America.

### Cas. mimosoides L.

Subshrub; flowers 1-3, axillary. A weed, native of S.E. Asia.

#### Cas. nodusa Buch.-Ham. ex Roxb.

Tree; leaflets 5-12 pairs; flowers in pink clusters ("pink Cassia"), often behind leaves. Native of the Malayan mountains.

### Cas. obtusifolia L.

Herb, resembling C. tora but not foetid; flowers yellow. Weed, American origin.

#### Cas. occidentalis L.

Herb or subshrub; flowers orange-yellow. Weed. native of S. America.

### Cas. siamea Lam.

Tree; flowers bright yellow. Ornamental and timber tree; native of Malaya and Thailand.

### Cas. tora L.

Herb or subshrub; leaflets 3 pairs; flowers pale yellow; pod narrow and curved, 4-angled.

## Centrosema plumieri Benth.

Twining subshrub; leaves 3-foliolate; flowers white with 2 large reddish violet blotches. "Butterfly pea", native of America.

## Clitoria laurifolia Poir.

Erect herb; leaves 3-foliolate; flowers white to pale blue. Native of Brazil.

### Clit. ternatea L.

Slender twiner; leaves 5-7 foliolate; flowers blue (often in double form). Native home unknown (either S. America or the Malay Islands).

#### Crotalaria bialata Schrank

Subshrub; leaves 1-foliolate; stems winged; flowers pale yellow; in sandy places or on waste ground, Jurong, Changi (Ridley 4671). Vern. Kachang hantu darat. Called C. alata Buch.-Ham. ex D. Don in Ridley's Flora.

#### Crot. mucronata Desv.

Shrubby; leaves 3-foliolate; flowers yellow with reddish or purplish stripes; in open places, Changi, Geylang. Called *Crot. saltiana* Andr. in Ridley's Flora.

### Crot. quinquefolia L.

Herb; leaves 5-(3-7-) foliolate; flowers bright yellow; in open waste ground, rare, Kranji (*Ridley 575*).

#### Crot. retusa L.

Shrubby; leaves 1-foliolate; stems not winged; flowers yellow; on sea-shores, Changi, (Ridley 2087).

### Cynometra cauliflora L.

Tree; leaves of 1 pair of leaflets; flowers white, small, in clusters on trunk; pod kidney-shaped, can be eaten raw or cooked. Prob. a native of E. Malesia. vern. Nam nam, Num num.

## Cyn. ramiflora L.

Leaflets 1-2 pairs; pod thick, ovoid, wrinkled, not edible; in tidal rivers and mangroves, Jurong, Kranji (Sinclair SFN 40957).

## Dalbergia candenatensis Prain

Climber; leaflets usually 5; panicles axillary; flowers white; pods thick, flat, 1- or 2-seeded rounded; in littoral scrubs, Kranji, P. Ubin (*Ridley 4678*), P. Damar. Called *D. torta* Grah. in Ridley's Flora.

#### Dalb. hullettii Prain

Shrub; flowers white, produced when the leaves are fallen; rare, in open swampy ground, Seletar (*Ridley* s.n. in 1896).

## Dalb. junghuhnii Benth.

Woody climber; flowers small, greenish white; in secondary woods, Changi. Sembawang, P. Ubin, Tanglin (Hullett 161). Called D. scortechinii Benth. in Ridley's Flora.

# Dalb. parviflora Roxb.

Large climber, spiny. Bukit Timah (Ngadiman 358).

#### Dalb. rostrata Grah.

Woody climber; flowers white; Gardens jungle, Changi (Ridley 6090), Bukit Mandai.

#### Dalb. velutina Benth.

Woody climber; Tempinis, Changi, Seletar (Sinclair 39617).

## Delonix regia Rafin.

A large deciduous tree with umbrella-shaped crown; leaves bipinnate; flowers scarlet (hence "flame of the forest"); pods woody, very large, with 20-40 seeds inside, splitting open on the tree. Native of Madagascar, widely planted. Vern. Gul mohm, 鳳凰木。

#### Derris amoena Benth.

Large climber; leaves pinnate, leaflets about 7; flowers pink, in panicles; pods flattened, 2-seeded; once found in Siglap (Ridley 10380).

# Der. elliptica Benth.

Native of continental Asia, often planted for the roots which are used for killing insects on vegetables and for catching fish. Vern. Tuba, 毒魚籐。

## Der. heptaphylla (L.) Merr.

Woody climber; flowers greenish; tidal river, Yeo Chu Kang, P. Ubin (Hullett 6194). Called D. sinuata Thw. in Ridley's Flora.

## Der. heterophylla (Willd.) Backer

Scandent shrub; leaslets 3-5; flowers pink; pods thin, flat, 1-seeded; common on sea coast and by tidal rivers, Changi, P. Ubin, Kranji (*Ridley s.n. in 1893*), etc. Called *D. uliginosa* Benth. in Ridley's Flora. Vern. *Akar ketuil*.

#### Der. scandens Benth.

Scandent bush; flowers white; Pulau Merambong (Ridley 9492).

### Der. thyrsiflora Benth.

Scandent bush; flowers in dense erect panicles, white; pods long and thin, reddish; common in open places, Bukit Timah, Tanglin, Changi (Ridley 2092).

## Desmodium heterocarpon (L.) DC.

Shrub; leaves 3-foliolate; flowers white or deep crimson; pods of several 1-seeded joints; in open places, Changi (*Ridley* s.n. in 1890), Tanglin, Seletar. Called *D. polycarpum* DC. in Ridley's Flora. A variety (var. *ovalifolium* Prain) with creeping habit, round silky leaflets and pale lavender flowers was recorded at Ang Mo Kio. Vern. *Kalumbar*.

## Desm. heterophyllum DC.

Creeping herb; flowers pink; common in the grassland all over the island; pod 3-4 mm wide. Singapore (Hullett 418).

### Desm. triflorum DC.

Like the above species, pods narrower (2-2.5 mm wide). Roadsides and grassland; Tanglin, Changi (Ridley 2079), Bukit Timah.

#### Desm. umbellatum DC.

Large shrub; flowers white; on sea coasts around the island; Pulau Senang (Sidek 87).

#### Dialium laurinum Baker

Large tree; leaves pinnate, leaflets 5-7; pods ovoid, velvetely dark brown, each containing one seed surrounded by sweet edible pulp; the hard, heavy wood is well-known; Kranji, MacRitchie Reservoir (Sinclair 8921). Vern. Kranji.

## Dial. maingayi Baker

Like the above, with 7-9 leaflets; Catchment Area, Bukit Timah (Ngadiman 34621).

#### Dial. wallichii Prain

Like the above, with 9-11 leaflets; Garden's jungle, Bukit Timah (Sinclair 39568).

#### Dolichos lablab L.

Also called Lablab niger Medik.; prob. native of India, cultivated for its edible pods and beans ("hyacinth bean"). Vern. Kachang kara, Karkaras, 扁豆。

### Entada spiralis Ridl.

Woody climber; leaves bipinnate, pinnae 4, leaflets usually 4 pairs in a pinna; flowers small, in dense racemes; pods curled with 5–11 very large seeds  $(3 \times 5 \text{ cm})$ ; in secondary forests, formerly at Tanglin (*Ridley 2102*), Chua Chu Kang, now survives in Catchment Area.

## Erythrina fusca Lour.

Tree; leaves 3-foliolate, terminal leaflets much longer than broad, tapering to base; flowers dark purple. A widely distributed species from India to the Pacific Islands, cultivated.

### Ery. orientalis Murr.

Tree; terminal leaflets broader than long, truncate at base; flowers dark scarlet. Also called *Ery. indica* Lam., from India to the Pacific Islands, but cultivated here. Vern. Indian coral tree, 刺桐。

## Ery. parcelli Hort.

Leaflets with a broad yellow midrib and several yellow stripes along the side-veins, the base truncate; flowers bright orange red; cultivated in gardens or as a roadside tree. Native of Trop. Asia.

#### Ery. subumbrans Merr.

Like Ery. orientalis, but terminal leaflets nearly as long as broad; and flowers comparatively smaller (3–5 cm long); native of Malesia. cultivated.

# Gliricida sepium Walp.

Small tree; leaves pinnate; leaflets 13-17; flowers pinkish native of Mexico (hence "Mexican lilac"); cultivated in gardens or along roadside.

# Hymenaea courbaril L.

Tall, fast-growing tree with a spreading crown; leaves consisting of a pair of oblique leaflets; flowers white; pods oblong with 2 or few seeds inside, stinking. The resin (collected by cutting the bark) is called "copal" of the trade. "Locust tree", native of the West Indies.

## Indigofera tinctoria L.

Shrubby, much-branched; leaves pinnate; leaslets 5-13; flowers greenish yellow. Indigo, a deep blue dye, is obtained by allowing plants to soak and ferment in water. Native of India and Ceylon. Vern. Nila, tarum, 藍靛。

# Indig. hirsuta L.

Herb, stems, leaf rachis, calyx and pods covered with long brown hairs; leaflets 5-9; a weed, found on sandy seashores.

## Intsia bijuga (Colebr.) O. Ktze.

Small tree; leaflets in 1 (or less commonly in 2) pair; pods woody, large, oblong, slightly flat; common along sea coast, Bajau (*Ridley 4675*), Changi, Kranji. Called *Afzelia bijuga* A. Gray and *A. retusa* Kurz in Ridley's Flora. Vern. *Merbau ayer*.

## Koompassia malaccensis Maing. ex Benth.

Gigantic tree with bug buttresses; leaflets 5–9; pods 1-seeded, flat, oblong. Formerly very common all over the island, now restricted to Bukit Timah and Catchment Area (*Ridley 6403*). Vern. *Kempas*.

## Kunstleria ridleyi Prain

Large climber; leaflets 5; flowers small, dark purple, in large panicles; pods golden pubescent; in woods, Gardens jungle, Mandai (*Corner 37735*), Seletar. Endemic to Singapore.

## Leucaena leucocephala (Lamk.) De Wit

Shrub; leaves bipinnate; flowers white, crowded in globular heads; pods thin flat, 2-valved; seeds many. "Lead tree", native of trop. America; occurs near villages. Called L. glauca Benth, in literature. Vern. Petai Jawa.

### Mezoneuron sumatranum W. & A. ex Benth.

Prickly climber; leaves bipinnate; flowers flame-coloured; pods bright red; in edge of woods and open places, not common; Bukit Timah, Kranji, Jurong. Vern. Akar Darah Blut (Eel's blood).

# Millettia atropurpurea Benth.

Tree; crown large dome-shaped; leaflets 9-11; flowers large, dark purple; pods thick leathery, 1-2-seeded. Native of the Malayan mountains, planted; fine specimens in MacRitchie Reservoir. Vern. *Tulang daing*.

#### Mill. eriantha Benth.

Woody climber, covered with golden hairs; leaflets 2–3 pairs; flowers coppery red; pods woody, 1-seeded; found from Gardens' jungle, Bukit Mandai, Tanjong Gul (Sinclair 10750). Called *Adinobotrys erianthus* Dunn in Ridley's Flora. Vern. *Akar pua*.

## Mill. maingayi Baker

Big climber with hanging panicles of scented pink flowers; leaflets 11-17; pods 1-seeded; recorded from Reservoir woods, Chua Chu Kang and Tanglin (Hullet 145). Called Padebruggea maingayi (Baker) Dunn in Ridley's Flora.

#### Mimosa invisa Mart. ex Colla

Subshrub or herb, scandent at base, erect above; pinnae 5-9 pairs; flower-heads reddish purple; in open places; native of trop. America.

# Mim. pudica L.

The sensitive plant; subshrub, spreading; stems prickly; leaves bipinnate, pinnae in two pairs, arranged at the top of a long stalk; flower-heads pink; pods jointed, the edges covered with bristles; native of trop. America, naturalized in waste places. Vern. Rumput si-malu, 含羞草。

## Mim. sepiaria Benth.

Shrub; pinnae 5-9 pairs; flower-heads white or pale yellow; native of trop. America.

## Maughania strobilifera St. Hil. ex O. Kuntze

Shrub, leaves 1-foliolate; on seashores, uncommon; recorded from Changi (Ridley 2076) and Blakang Mati. Formerly called Flemingia strobilifera Br.

#### Mucuna bennetti F. Muell.

Climber; leaves trifoliolate; flowers large, scarlet, in racemes. Introduced from New Guinea. Seeds obtained only through hand-pollination.

## Muc. gigantea (Willd.) DC.

Climber; leaves large, trifoliolate; flowers greenish white; recorded from Blakang Mati and Telok Paku (Sinclair 9972).

# Neptunia natans (Linn. f.) Druce

A water-sensitive plant; floating; leaves bipinnate; leaflets numerous; flowers bright yellow; perhaps a native of S.E. Asia; in ditches, formerly very abundant, now very rarely cultivated as a vegetable. Also called *N. oleracea* Lour.

## Ormosia bancana (Miq.) Merr.

Tree; leaflets 7-13, small, deep green; flowers white; pods round; seeds 1-3, red; Catchment Area, Changi, Pasir Panjang (Ridley 8096). Formerly called O. parvifolia Baker.

#### Ormos, macrodisca Bak.

A big tree; flowers pink; pods flat and round, with a large scarlet and black seed; a timber tree, very rare, once recorded in Dalvey Road (Ridley 2103).

# Ormos. sumatrana (Miq.) Prain

Tree; flowers white; rare, recorded from Tanglin and Seletar (Ridley 5574).

# Pachyrhizus erosus (L.) Urb

Twining herb, spreading, with a tuberous tap root; leaves 3-foliolate. Native of America; leaves, beans and seeds poisonous but the tuberous roots ("yam bean") are edible. Also called *P. tuberosus* Spreng. Vern. *Bengkuang*, 豆薯。

# Parkia speciosa Hassk.

Tall tree, buttressed; leaves bipinnate; leaflets 20-35 pairs on side stalks; flowers very small, crowded on pear-shaped heads; pods large, flattened and twisted, with onion-smell, edible; scattered in forests, Bukit Timah, Catchment Area. Vern. *Petai*.

# Peltophorum pterocarpum Backer ex Heyne

Tree, with dome-shaped crown; leaves bipinnate; flowers showy, yellow (hence "yellow flame"); pods flat, thin, with a wing around; formerly a native tree at Changi coast (*Ridley 4676*), now extinct, but widely planted as ornamental or as roadside trees. Also called *Pelt*, *ferrugineum* Benth. Vern. *Balai*, 盾柱木。

### Phaseolus lunatus Linn.

Lima bean, native of S. America, occasionally cultivated for its edible beans.

## Phas. vulgaris Linn.

French bean or kidney bean, native of trop. America, commonly cultivated for its edible beans. Vern. Kachang pendek, 四季豆,菜豆。 (several other species of Phaseolus (or Vigna) of which the dried beans are selling in stores including: Phas. aureus Roxb., the green gram, 綠豆, native of India, and Phas. angularis F. W. Wright, the adzuki bean,赤豆, native of the Orient).

## Pithecellobium clypearia Benth.

Small tree; leaves bipinnate; pinnae 2–9 pairs; leaflets 4–14 pairs, rhombic, asymmateric; flowers in large panicles; pods flattish, lobed, twisted and loosely curled; common in secondary forests, Seletar, (Goodenough 2097), Chua Chu Kang. Vern. Petai belalang.

#### Pith. contortum Mart.

Small tree, like *P. clypearia* but twigs rounded (not angled as in the latter); common, Tanglin, Changi, Seletar, Bukit Mandai (*Ridley 4755*).

#### Pith. dulce Benth.

Tree, with a bushy crown; pods pale greenish, seeds black covered by thick white pulp. A native of trop. America, erroneously called "Madras Thorn".

## Pith. ellipticum Hassk.

Tree; pods flat, 3 cm wide, twisted into a ring; Seletar, P. Merambong (Corner 29963), P. Ubin. Vern. Jering hutan.

# Pith. globosum (Bl.) Kosterm.

Small tree. Tanjong Bunga (Ridley 6408). Called P. affine Baker in Ridley's Flora.

# Pith. jiringa (Jack) Prain

Tree, pods large, 5-6 cm wide, strongly swollen at each seed, curled and twisted, garlic smelled, can be cooked and consumed as a vegetable, wild in secondary forests, commonly cultivated for the edible pods. Called *P. lobatum*, Gardens jungle (*Ridley* s.n. in 1897). Vern. *Jering*.

# Pith. microcarpum Benth.

Small tree, flowers white; pods curly, bright orange; in secondary woods. Tanglin, Changi (Ridley 188) Chua Chu Kang, Bukit Timah.

# Pith. splendens Corner

Large tree; pods flat, swollen at the seeds, slightly curved; rare, Bedok (Ridley 8446), Seletar. Called P. confertum Benth in Ridley's Flora.

# Pongamia pinnata (L.) Pierre

Small tree; leaflets 5-7; flowers pink; formerly common on the coast, Changi, Siglap, Jurong, P. Ubin (*Ridley*) s.n. 1891), now occasionally found in mangrove, sometimes cultivated. Vern. Mempari, 水黄皮。

## Psophocarpus tetragonolobus DC.

Perennial twinner, with a tuberous root; leaves 3-foliolate; flowers pale blueviolet; pods cylindric with 4 wings ("four angled bean"). Prob. native to Madagascar, cultivated for its edible beans. Vern. Kachang botor, 四翼豆。

## Psoralea corylifolia Linn.

Annual herb; leaves simple. Native of India, grown on several occasions in Botanic Gardens; the seeds are used medicinally. 補骨脂。

## Pterocarpus indicus Willd.

Large tree, leaves pinnate, flowers yellow, fragrant; pods 1-2-seed, wood valuable. Native of the continental Asia and Malaya; extensively planted as roadside trees, easily propagated by large cuttings. Vern. Angsana, Sena, 印度紫檀。

## Samanea saman (Jacq.) Merr.

Large tree, trunk usually branched; crown broadly dome-shaped; leaves bipinnate. "Rain tree", a native of Tropical America, often planted as a shade tree in large gardens or on roadsides. Also called *Enterolobium saman* Prain.

### Saraca indica Linn.

Small tree; leaves pinnate; leaflets 4–6 pairs; flowers orange-yellow, in large clusters on trunk or branches; pods large, flat, purple. Native of Malaya and the continental Asia, Cultivated. Vern. Gapis. *Talan*.

## Sar. thaipingensis Cantley ex Prain

Like above species, but leaves larger and leaflets with a conspicuous stalk. Native of Malaya, sometimes cultivated in gardens.

# Serianthes dilmyi Fosberg

Tree; leaves bipinnate; pods woody, thick; once collected from Bukit Timah (Wallich 5285). Recently collected from Pulau Pawai (Sinclair 38902). Called Seri. grandiflora Benth. in Ridley's Flora.

# Sesbania grandiflora Pers.

Shrub or small tree, with showy white or blue flowers. Native country unknown, cultivated as an ornamental plant for its edible leaves. Vern. *Turi*, 大花田菁。

### Sindora wallichii Grah. ex Benth.

Large tree with a massive crown; leaves with 3-4 pairs of leaflets; pods oval to oblong, flat, 1-seeded, covered with close, stout hard spines; Gardens' jungle, Changi (Bakar s.n. in 1893). Vern. Sepetir daun tebal.

# Spatholobus ferrugineus Benth.

Large climber, sometimes to the tops of the tallest trees; leaves 3-foliolate; flowers dark purple; pods flat, thin, with 1 seed near the tip, indehiscent; Gardens' jungle, Tanglin, Changi (Ridley 3609a) Bukit Timah. Vern. Ajar Sejangat.

## Spath. maingayi Prain

Flowers white or pinkish white; Gardens' jungle, Bukit Timah Road (Ridley 6397).

## Spath. ridleyi Prain

Flowers white or yellow; Botanic Gardens (Ridley 6401), Chua Chu Kang.

# Strongylodon macrobotrys A. Gray

"Jade vine", from the Philippines, sometimes cultivated for its large, hanging, blue-green flowers.

#### Tamarindus indica Linn.

Large tree, with a dense, rounded crown; leaves pinnate; leaflets 10-20 pairs; flowers pale yellowish; pods brown. The pulp of the ripe pods is edible, also employed in the native medicine; timber valuable. Native of tropical E. Africa and W. Asia. Vern. Asam jawa, Tamarind, 羅望子。

# Tephrosia noctiflora Bojer ex Baker

Bushy herb; leaflets 13-19; flowers white or pinkish; on waste grounds. Native of Africa.

### Uraria crinita Desv. ex DC.

Shrubby; leaflets 5-7; flowers lavender, in dense racemes, to 30 cm long; in open waste places. Native of Tropical Asia.

# Vigna marima Merr.

Small twiner; leaves 3-foliolate; flowers yellow ("yellow vetch"); on sandy seashores, Changi (Ridley s.n. in 1890), Blakang Mati. Called V. retusa Walp. in Ridley's Flora.

# Vigna unquiculata (L.) Walp.

Twining herbs; leaves 3-foliolate; prob. native of India; two forms are cultivated: ssp. sinensis Fruw. (pods up to 30 cm long, vern. Kachang bol, 東豆) and ssp. sesquipedalis Fruw. (pods 30-90 cm long, vern. Kachang perut ayam, 長豆豆); pods of both forms are served as vegetables.

# Zornia diphylla Pers.

Creeping herb; leaves of a pair of narrow leaflets; flowers yellow; pods spiny; in open sandy places. A pantropical weed.